

Appln. No. 10/033,875
Amendment
Reply to Office Action dated October 28, 2003

Docket No. 304-773

REMARKS

The foregoing amendments and these remarks are in response to the Final Office Action dated October 28, 2003. This amendment is timely filed.

At the time of the Office Action, claims 2-8, 10-15, 18, and 20-60 were pending in the application. In the Office Action, claims 2-8, 10-15, 18 and 20-60 were finally rejected under 35 U.S.C. §112. Claims 6, 14, 20-24, 27-29, 50, 51, 54 and 57 were rejected under 35 U.S.C. §102(b). Claims 2-4, 5, 7-8, 10, 15, 18 and 52-53 were rejected under 35 U.S.C. §103(a).

I. Objections to the drawings

The drawings were objected to for failing to show every feature of the invention specified in the claims. In particular, the visible connection of claims 2-8, 10-15, 18 and 20-60 was required to be shown, or the feature cancelled from the claims. This feature has been duly cancelled from the claims herein, and withdrawal of the drawing objection is respectfully requested.

II. Rejections to the claims under 35 U.S.C. § 112

Claims 2-8, 10-15, 18 and 20-60 were rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, the visible connection was asserted to have not been clearly described in the specification.

Claims 2-8, 10-15, 18 and 20-60 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the phrase "in a visible connection with the device" in claims 4, 6, 11, 13, 14, 20 and 58 was asserted to be unclear and to make the claim language confusing. This feature is removed from the claims herein, and withdrawal of the §112 rejections is respectfully requested.

Appln. No. 10/033,875
Amendment
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Docket No. 304-773

III. Rejections to the claim based upon Art

Claims 6, 14, 20-24, 27-29, 50-51, 54 and 57 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,118,107 to Köbrich. Claims 2-5, 7-8, 10, 15, 18 and 52-53 were rejected under 35 U.S.C. §103(a) as being unpatentable over Köbrich in view of U.S. Patent No. 6,072,165 to Feldman. Claim 25 was rejected under 35 U.S.C. §103(a) as being unpatentable over Köbrich. Claims 11-13, 26, 30-31, 34, 37-42, 45-49, 55-56 and 58-60 were rejected under 35 U.S.C. §103(a) as being unpatentable over Köbrich in view of U.S. Patent No. 5,893,996 to Gross et al. Claims 32-33, 35-36 and 43-44 were rejected under 35 U.S.C. §103(a) as being unpatentable over Köbrich and Gross, and further in view of Feldman.

Köbrich discloses a measurement of temperature in a glass ceramic plate based on a correlation between transmission of light through the glass ceramic plate in wave-length range of a temperature that is typical of the respective glass ceramic material. This means that light is guided through the glass ceramic plate from below, is reflected on the upper side by a reflector 9, and then passes through the glass ceramic plate a second time. As the transmission of the light through the glass ceramic plate changes with temperature, the down-reflected light can be compared with the light which has been sent up and from this difference the temperature can be derived.

According to Köbrich, many factors can have an influence on the temperature measurement. These factors are the thickness of the glass ceramic plate, the glass ceramic material which is used, the quality of the reflector on the upper side, the quality of the contacts between the upper side of the glass ceramic plate and the underside of the reflector, and a possible degradation of the transmission properties of the glass ceramic plate. With the device defined in the present claims, to the contrary, there is only the need for one known type of a measurement element, which can be fixed to different types of glass ceramic plates. It is much easier to provide a standardized measuring element than to adapt a measuring system to different glass ceramic plates which cannot always be selected at will, depending on size and other desired properties of the glass ceramic plate. Furthermore, as the measuring elements are mounted on the upper side of the glass

(WP165572;1)

Appln. No. 10/033,875
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Docket No. 304-773

ceramic plate, it is easier to establish a safe contact between the measuring elements and an underside of the cooking vessel.

To understand the idea of the device set out in the amended claims, it is important to understand the heat from the cooking vessel is transported into the measuring element so that they have about the same temperature. The measuring element 10 radiates this heat. As the emission capacity for heat radiation of the measuring element is known, from this heat radiation the temperature of the measuring element can easily be derived. This heat radiation can pass through a glass ceramic plate regardless of its properties, as long as it has an adequate transmission for this heat radiation. It is not necessary to know the exact properties of the glass ceramic plate. Usual glass ceramic plates have a very good transmission capacity for infrared radiation, which is used according to the invention with the infrared sensor.

The main difference between Köbrich and the present claims is that in Köbrich the glass ceramic plate is the measuring element, as this glass ceramic material is influencing the light transmission. A light source and a light receiver are necessary.

With the device defined in the present claims, the measuring element is heated by the contacting cooking vessel and radiates heat radiation, which is characteristic for its temperature. This heat radiation is detected by the infrared sensor from below through the hotplate. As the radiation properties of the measuring element are known, its temperature and the temperature of the cooking vessel as well can be determined. There is thus no teaching or suggestion in Köbrich to provide a device as set out in the present claims.

The prior art of Gross does not disclose a triangular arrangement of three measuring elements. Gross only discloses a sensor loop (30), which is in one-piece form and may be seen as having a form with three appendices (40). However, this does not disclose or suggest to a person skilled in the art to provide three separate measuring elements in a triangular arrangement.

Fischer discloses only a temperature regulator (41) with a temperature sensor member (40). The temperature sensor member (40) and the temperature regulator (41)

(WP165572;1)

Appln. No. 10/033,875
Amendment
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Docket No. 304-773

are connected via a thin tube. There is no hint as to a temperature measuring with a measuring element and an infrared sensor, wherein the measuring element has a heat radiation emission, which is sensed by the infrared sensor.

Feldman clearly uses thermocouples, which are placed on a hot plate of a cooker or the like. The use of thermocouples implies that wires or other electrical connectors are necessary for transmitting the electrical signals to a temperature control or the like. Furthermore, a person skilled in the art would not transfer the principle of thermocouples to a device according to the present claims with measuring elements having an underside with a defined emission capacity for heat radiation, wherein this heat radiation is measured from below with an infrared sensor.

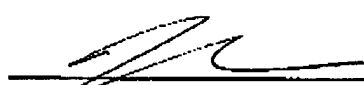
For the foregoing reasons, the independent claims are believed patentable and in condition for allowance. The dependent claims are believed allowable because of their dependence upon allowable base claims, and because of the further features recited.

IV. Conclusion

Applicant has made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. Nevertheless, Applicant invites the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. In view of the foregoing remarks, Applicant respectfully requests reconsideration and prompt allowance of the pending claims.

Respectfully submitted,

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Docket No. 304-773

(WP165572;1)